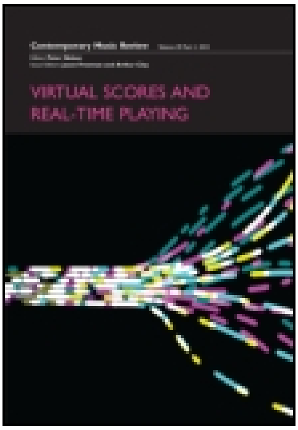


Contemporary Music Review

Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/gcmr20

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Available online: 24 Aug 2009

Contemporary Music Review,
1992, Vol. 6, Part 2, pp. 71–79
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Symmetries and the "New Tonality"

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Harmonic symmetry, a powerful organizing principle in the early works of the twentieth century, has recently reappeared in a surprising form – in pieces which might be described as tonal or at least neo-tonal. The author discusses this phenomenon, its motivations, and its origins.

The crucial role of symmetrical divisions of the octave as a common ground in twentieth century musical thinking has been discussed for many years. Two recent books by composers, George Perle's *The Listening Composer*, and Milton Babbitt's *Words About Music*, spend much of their analytical pages showing the workings of symmetrical pitch structures in music of Varese, Schoenberg, Stravinsky, Webern, Berg and the two authors themselves. Perle finds there a common ground among the central figures of the early part of the century, "a common ground which they themselves failed to recognize." He asserts that an understanding of their shared concepts, in which symmetrical orderings most often played a principal role, will locate our tradition and free music to move on.

Neither Babbitt nor Perle would be sympathetic to the investigation that follows, since it applies certain ideas about symmetries to an enterprise that both believe doomed, that is the making of a new tonal music. Both of these distinguished composer-theorists are on record as believing that the historical imperative of tonality is long past. Perle's *Twelve-Tone Tonality* is exactly that, structures which assert the regular circulation of the full chromatic, with hierarchies and stabilities based on principles other than those of diatonic (or even chromatic) tonality.

Ever since access to the full chromatic was gained by composers at the turn of the century, the mode of control of this resource has defined each composer's most crucial decisions. Whenever a new clarification in the use of the total chromatic has been achieved symmetry has played a crucial role.

One of the most dramatic confrontations with the problem of the circulation of all twelve tones was Webern's following his *String Trio op. 20*. This piece, in which the turnover of pitches is fast, exacerbated by an expressionist compulsion not to repeat pitches in register, gives an effect of extreme distension, even today a kind of breaking point in comprehensibility. This is because the pregnancy of the gestures tend to cancel each other out, or reach past each other in asking for attention.

Of course we have, since then, heard many pieces which seem beyond our ability to catch up to them, but few frustrate as the Webern *Trio* can, since it is all so precisely wrought and intended. I am trying here to account for the intensity of Webern's reaction as manifested in his next piece, the *Symphony*, in which the

opening period introduces something lacking in serial music to that point, a sense of repose and serenity.

This is achieved by a set of simple devices which seem obvious now but must have been very hard to find at the time. The opening of the *Symphony,* though projected as an inversion canon, is also a broken chord, sustained over many measures, registers fixed. And it is a stable chord made up of two fourth chords ranged around an axis A and its "envelope" E-flat (Ex. 1).

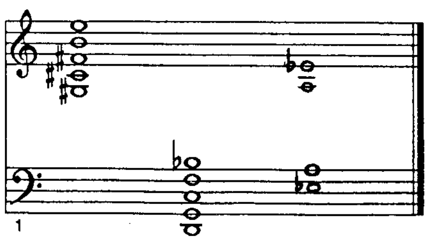


Figure 1 Webern Symphony, opening spacing

The effect of this sustained sonority is very stable, classical, and, the more one listens to it, tonal, from a composer who once said that he heard all his local moments in tonal terms. It provides just the kind of foundation that would enable a classicist like Webern to call his piece a symphony. Its harmonic symmetry remains a reference point for all the other harmonies in the piece, which become aurally defined by their degree of deviation from exact symmetry.

The axis note A is suppressed in importance in this passage. In a later *locus classicus* for symmetrical and canonic ordering, the second movement of Webern's *Piano Variations,* the axis notes are stressed (as they are in another well-known case, the first movement of Bartok's *Music for Strings, Percussion, and Celesta*).

Resonances of the drastic series of decisions taken by Webern in his *Symphony,* especially the fixing of the registers, can be felt in many subsequent works by Dallapiccola, Boulez, Maxwell Davies, Mel Powell and many others.

More recently, harmonic symmetries have been appearing independent of twelve-note considerations, but with some of the same goals as those of Webern in his *Symphony.* It has been found that symmetrical chords can provide some of the same sense of grounding that the triad provided in the tonal system. It is also becoming possible to mix tonal and symmetrical structures, though if the symmetries are reasonably strict, tonic-dominant relationships will be necessarily and salutarily displaced by other relationships dictated by the tritone bisection of the octave.

At the beginning of his *First String Quartet,* Fred Lerdahl presents, bit by bit, a kind of phrase model which will expand, by interpolation, prolongation, and some rather free association from just a few seconds to many minutes in length. The basic harmonic ingredients of this phrase model become clear by the sixth unit, quoted here (Ex. 2). This music is projected without vibrato, old music style, as if to emphasize its archetypal qualities, and its symmetrical harmonic construction is based on simple archaic stepwise voice leadings.
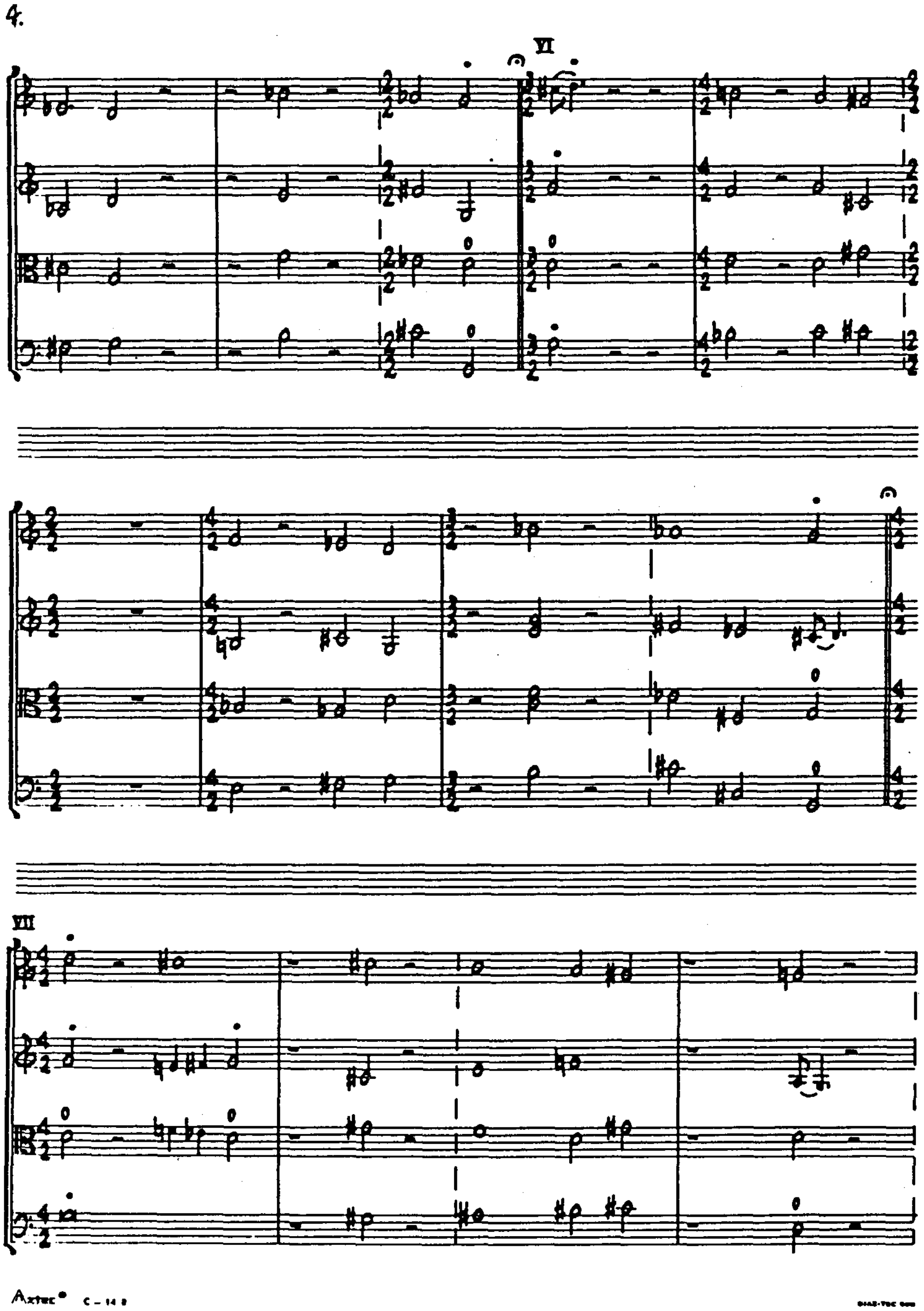


Figure 2 Lerdahl, First String Quartet
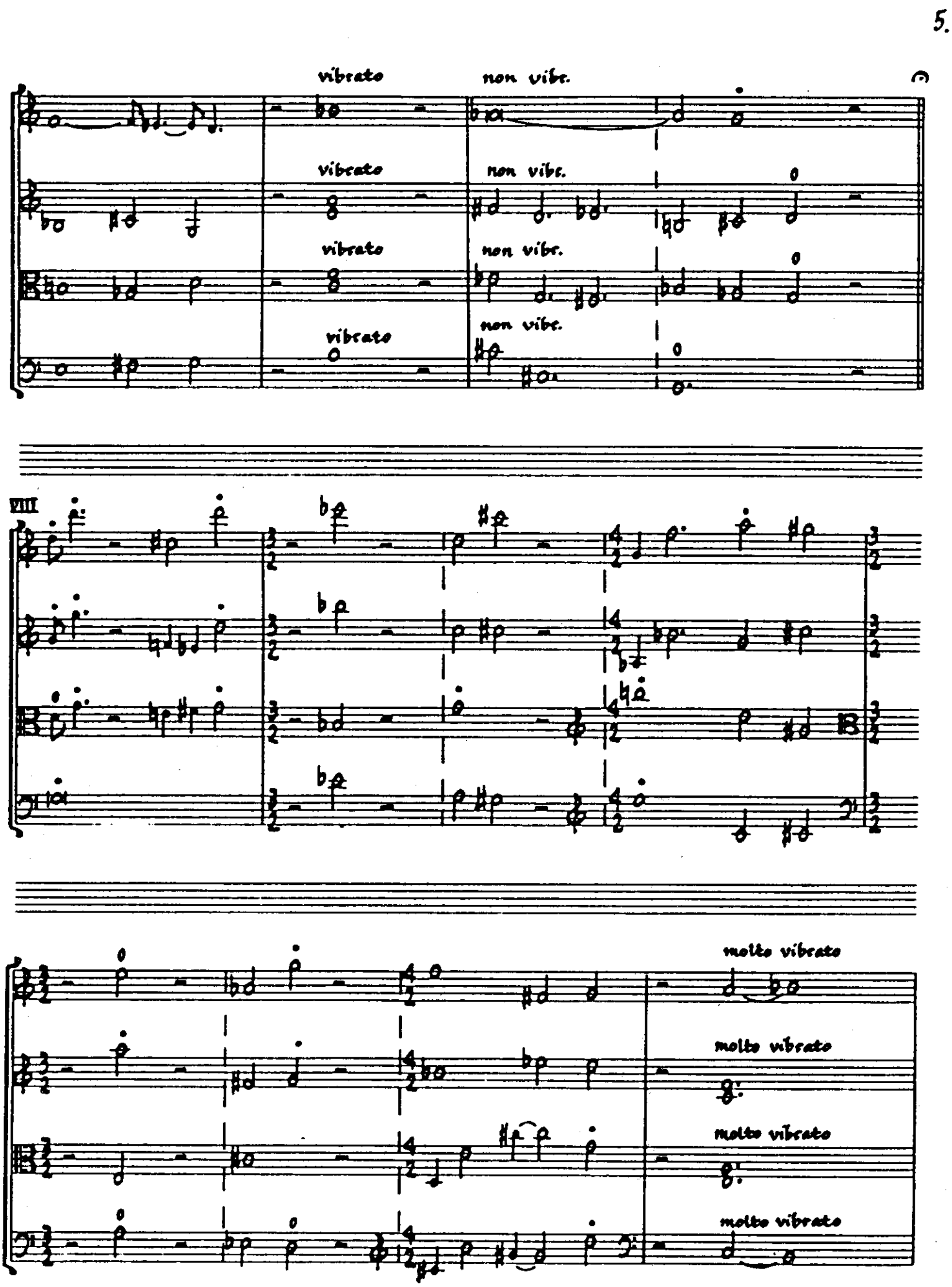


Figure 2 *Continued*
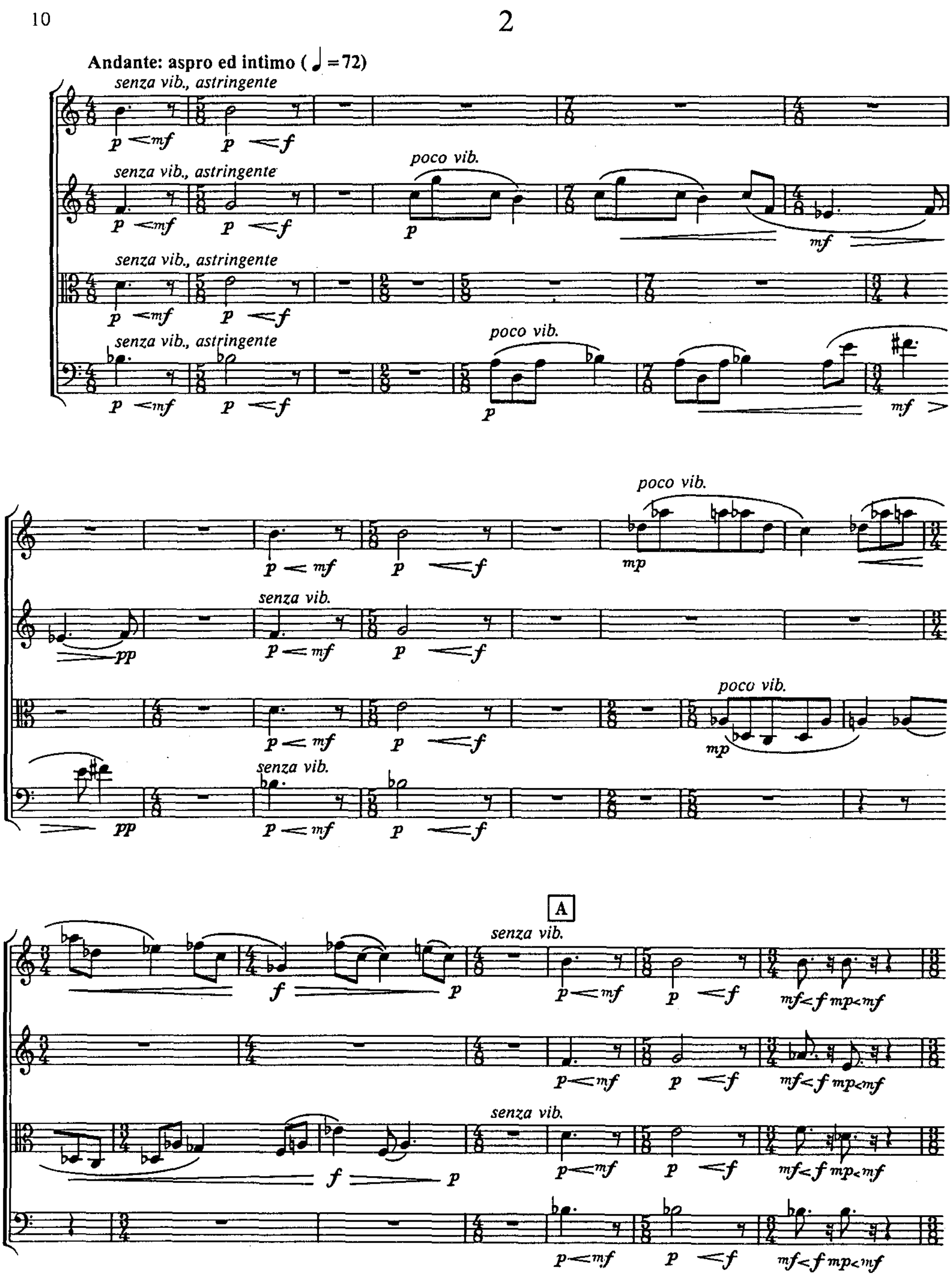


Figure 3 Harbison, First String Quartet, II

Ex. 3 cont.
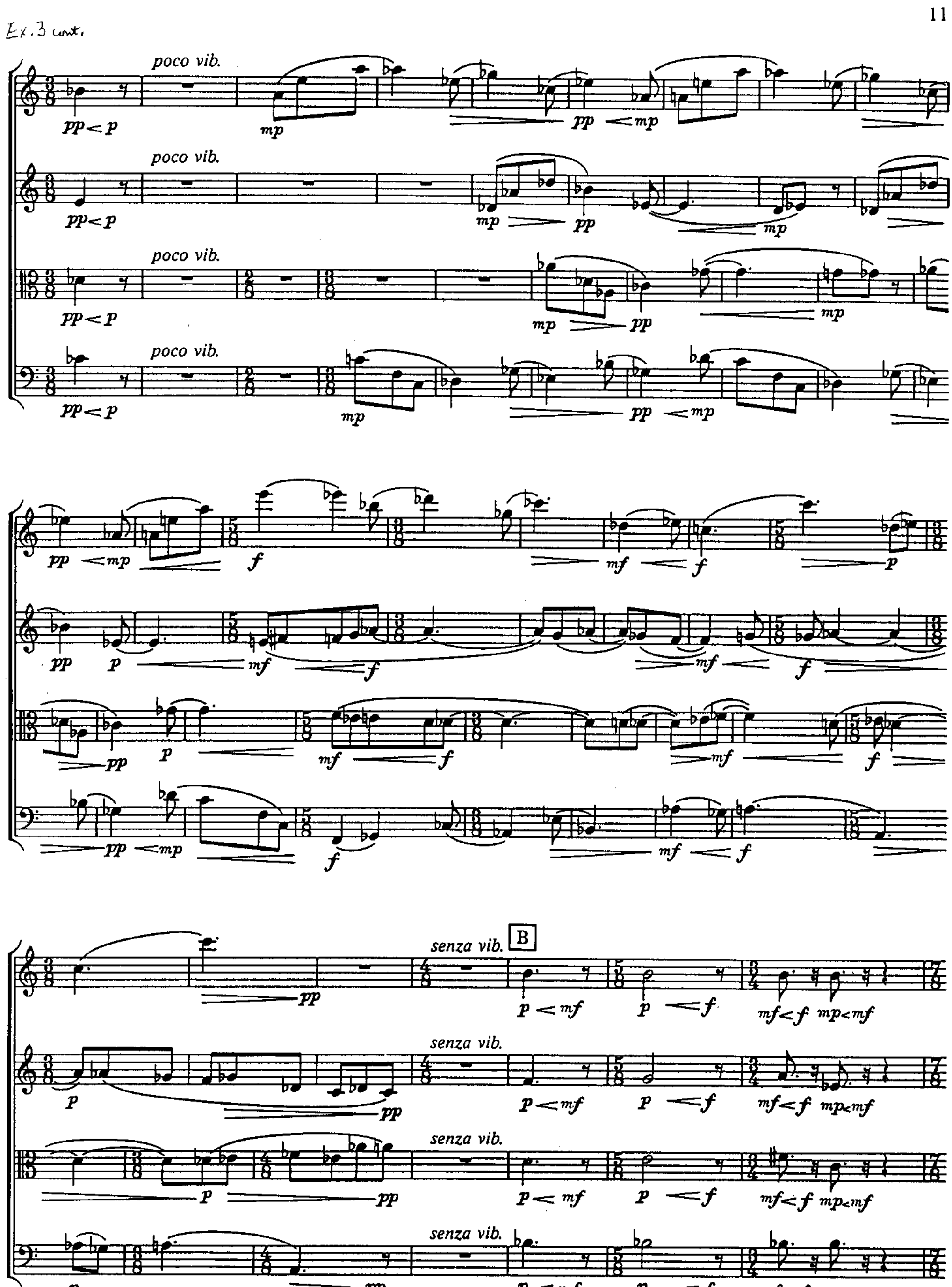


Figure 3 *Continued*

The tonality is G, the axis of symmetry is the dyad F-E (with occasional tritone transpositions). Dominant function is supplied by constructs on C♯, especially the chord C♯-D♯-F♯-G♯ (respelled) which resolves by collapsing semitones to G-D, the tonic. Subdominant function is represented by the chord B-flat-E-F-B-natural which generally prepares the dominant function chord built on C♯. A dominant of the dominant (again speaking of functions, not scale degrees) also appears, the chord C-D-G-A. These individual symmetrical chords (each different from each other) come in for vast expansions in the later variations, becoming tonal centers in themselves. Already by variation VIII the registers become freer, breaking the symmetries, but the sonorities are recognizable from the earlier, simpler presentations.

Lerdahl requires a *Second Quartet* to realize the last two expanded variations of his phrase model, their vast proportions virtually requiring an experience of the *First Quartet* to be properly heard. Or perhaps they are organized in the ear by the reprise of the first eight short statements from the first quartet, in reverse order, which concludes the piece.

In my *String Quartet no. 1* (1984) the second movement begins with and returns often to a pair of frozen chords, adulterated triads of B-flat major and E-minor (Ex. 3). These are the reference points (and expressively the restraints or brakes) for two long passages ranged around the symmetrical axis E-F. Between the two passages comes the only relief, a very freely spaced and sonorous section marked *lustro*, the "reward" for suffering the limitations of the outer sections. Paradoxically, this contrast section has less tonal movement than the symmetrically arranged sections which flank it. Their "key areas" tend to shift with each phrase. The first of the two-voice canons in the opening section expresses a C-major-D-minor location, the second unambiguously D-flat minor, the four-voice canon is F-major and A-flat major. All of these key centers are referred to again in the final section (after letter D), with a new reference, the G-major before letter F. This tonal flexibility under symmetrical constraint results in an ambiguity of tone crucial to the work's expressive intent. No hearer has identified the specific technical issues in these passages, but most have grasped its expressive point.

In his theoretical writings and his more recent music George Perle has demonstrated the great harmonic richness to be achieved by the use of more than one axis of symmetry, the differing axes governing different elements of the texture. Though not aurally unacquainted with Perle's music I was unaware of its specific theoretical interests when I composed my *Words from Paterson* in March 1988. So what I am about to describe will seem to some a naive late arrival at a very suggestive aspect of symmetrical thinking.

The text for *Words from Paterson* (W.C. Williams) has much to do with descriptions of the Unicorn Tapestry at the Cloisters in New York City. The music seemed to need a modern analogy to medieval voice leading techniques. At the beginning of the piece (Ex. 4) the alto flute and English horn play a duet guided by an axis of symmetry C-C♯. The viola and cello duo is guided by the single axis D, which also serves as the tonal center for the passage. This conjunction of the two possible Orders of harmonic symmetry, the one around a single tone (which produces intervals with allegiance to the whole-tone scale), and the one around two adjacent semitones (which produces intervals with allegiance to the chromatic scale), offers an all-interval harmonic palette. Later in the piece only

one of the symmetrical Orders might be chosen for a given passage, as in the double canon for the vision of the birds in Part Two m. 42 (Ex. 5), or two axes from the same Order may be chosen, as in Part One m. 81 (Ex. 6) where the winds work around a D axis, the strings around E-flat, their independent tonalities being A-flat and A respectively.

Of course there are many instances in *Words from Paterson* where the systematic attitudes relax, though they are never entirely absent. In a looser way both the solo lines and the accompaniment in the flower catalogue, Part Two m. 277, revolve around symmetrical fulcrums (Ex. 7).

Among the many recent pieces which use symmetrical-tonal structures are numerous choral works by the English composer John Taverner, where their influence on the large design is defining, the *First String Quartet* and the large cantata *Estrella* by Peter Child, where the symmetrical structures are associated with a kind of chorale-writing, and chamber music by younger composers, among them the American Tim Geller and the Englishman Benedict Mason, in which symmetries and a kind of new tonality live in an environment of considerable textural complexity.

As I have suggested I regard the use of these techniques in my own work as anything but normative, and their appearance in my own work have thus far been rare, occasioned by the need for claustrophic affect, as in the *Quartet*, or exotic color as in the *Words from Paterson*. But my experience in those pieces and in the work of other composers suggests that their application for a flexible and non-traditional new tonality may have rich possibilities for many of us.

Note

The present article was presented, and will be republished, in expanded form as part of the Mary Biddle Duke Lectures at Duke University.

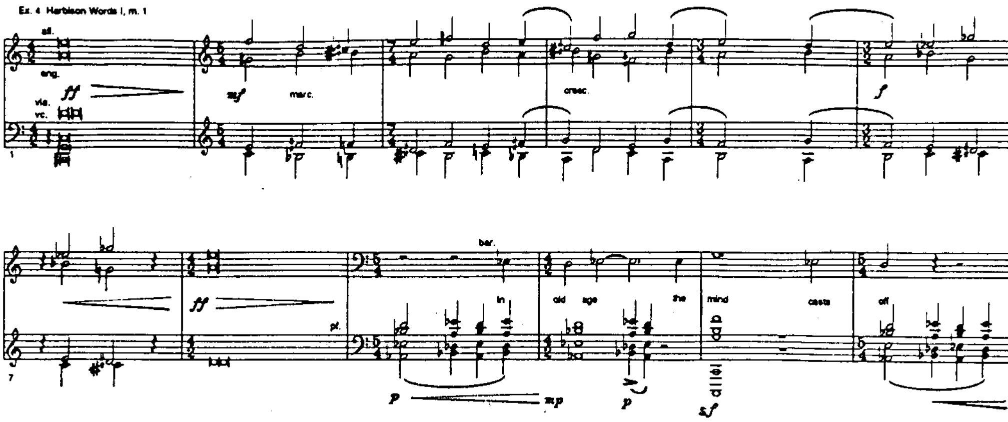


Figure 4 Harbison, Words I, m. 1

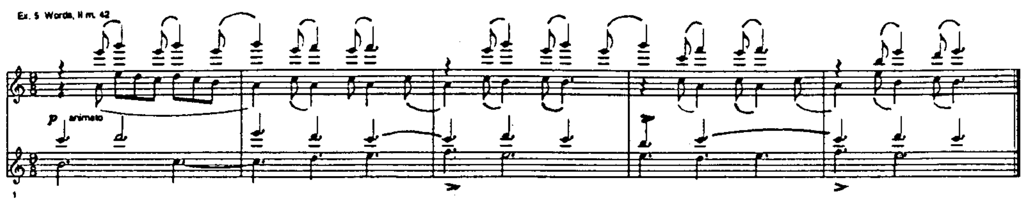


Figure 5 Words, II, m. 42

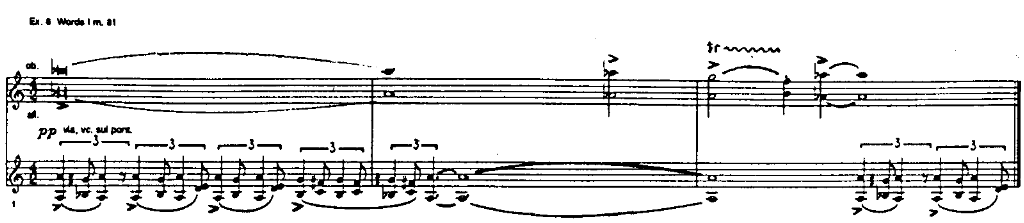


Figure 6 Words, I, m. 51

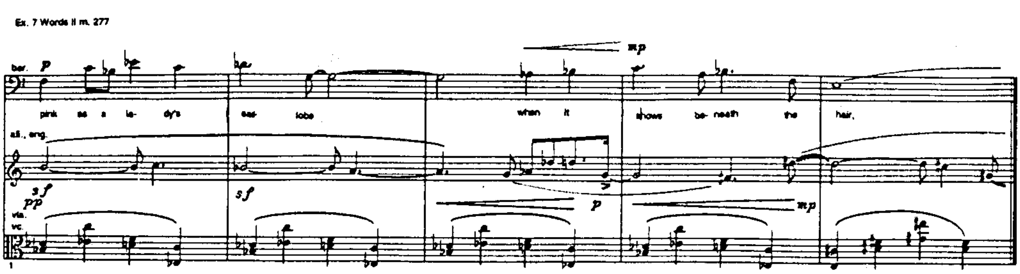


Figure 7 Words II, m. 277